Gamma cystathionase
Polyclonal ANTIBODY
Catalog Number: 12217-1-AP

Basic Information

- **Catalog Number:** 12217-1-AP
- **Size:** 52 μg/150 μl
- **Source:** Rabbit
- **Isotype:** IgG
- **Purification Method:** Antigen affinity purification
- **Immunogen Catalog Number:** AG2872
- **GenBank Accession Number:** BC015807
- **Gene ID (NCBI):** 1491
- **Full Name:** cystathionase (cystathionine gamma-lyase)
- **Calculated MW:** 405aa, 45 kDa
- **Observed MW:** 40-45 kDa

Recommended Dilutions:
- **WB:** 1:1000-1:4000
- **IP:** 0.5-4.0 μg for IP and 1:500-1:1000 for WB
- **IF:** 1:50-1:500

Applications

- **Tested Applications:** FC, IF, IHC, IP, WB, ELISA
- **Cited Applications:** IF, IHC, WB
- **Species Specificity:** human, mouse, rat
- **Cited Species:** human, mouse, Rabbit, rat

- **Note:** IHC: suggested antigen retrieval with TE buffer pH 9.0; (*) Alternatively, antigen retrieval may be performed with citrate buffer pH 6.0

Background Information

CTH, also named as Gamma-cystathionase and CSE, belongs to the transsulfuration enzymes family. It catalyzes the last step in the transsulfuration pathway from methionine to cysteine. CTH converts two cysteine molecules to lanthionine and hydrogen sulfide. CTH can also accept homocysteine as substrate. Its specificity depends on the levels of the endogenous substrates. CTH is the major H2S-producing enzyme in kidney, liver, vascular smooth muscle cells and enterocytes. The endogenous production of H2S plays a significant role in the regulation of cellular functions, including cell growth, hyperpolarization of cell membranes, modulation of neuronal excitability and relaxation of smooth muscle cells. The CSE/H2S pathway is upregulated in the heart in a murine model of CVB3-induced myocarditis and that inhibition of endogenous H2S is beneficial to treatment early in the disease while administration of exogenous H2S is protective to infected myocardium during the later stage. Mutations in the gene encoding CTH can result in the autosomal recessive disease cystathioninuria; a disorder characterized by the unusual accumulation of plasma cystathionine causing increased urinary excretion. Both male and female CTH-null mice showed hypercystathioninemia and hyperhomocysteinemia, but not hypermethioninemia. CSE has also been reported to be expressed in endothelial cells and contribute to endothelium-dependent vasorelaxation. It can be detected a minor 36 kDa band probably representing a degradative intermediate except the major 43 kDa band in vitamin B6-deficient rat liver (PMID: 8660672). CTH also can be detected as ~70kD in rat liver (PMID: 18974309).

This antibody is a rabbit polyclonal antibody raised against residues near the C terminus of human CTH.

Notable Publications

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Storage

- **Store at:** -20°C. Stable for one year after shipment.
- **Storage Buffer:** PBS with 0.1% sodium azide and 50% glycerol pH 7.3.
- **Aliquoting is unnecessary for -20°C storage**
**Selected Validation Data**

**WB result of CTH antibody (12217-1-AP, 1:500) with si-control and si-CTH transfected HepG2 cell.**

Various lysates were subjected to SDS PAGE followed by western blot with 12217-1-AP (Gamma cystathionase antibody) at dilution of 1:2000 incubated at room temperature for 1.5 hours.

**IP result of anti-Gamma cystathionase (IP: 12217-1-AP, 4ug. Detection: 12217-1-AP 1:600) with mouse liver tissue lysate 4000 ug.**

**Immunohistochemical analysis of paraffin-embedded human liver cancer tissue slide using 12217-1-AP (Gamma cystathionase antibody) at dilution of 1:200 (under 10x lens). Heat mediated antigen retrieved with Tris-EDTA buffer (pH 9).**

**Immunohistochemical analysis of paraffin-embedded human liver cancer tissue slide using 12217-1-AP (Gamma cystathionase antibody) at dilution of 1:200 (under 40x lens). Heat mediated antigen retrieved with Tris-EDTA buffer (pH 9).**

**Immunofluorescent analysis of (-20°C Ethanol) fixed HepG2 cells using 12217-1-AP (Gamma cystathionase antibody) at dilution of 1:50 and CoraLite488-conjugated AffiniPure Goat Anti-Rabbit IgG(H+L).**

1X10^6 MCF-7 cells were stained with 0.2ug Gamma cystathionase antibody (12217-1-AP, red) and control antibody (blue). Fixed with 90% MeOH blocked with 3% BSA (30 min). Alexa Fluor 488-conjugated AffiniPure Goat Anti-Rabbit IgG(H+L) with dilution 1:1500.